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10/090,446	03/04/2002	Anurag Ateet Gupta	3030.006USU	3406

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EXAMINER

NGUYEN, TAM M

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 08/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,446

Applicant(s)

GUPTA ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 27-38 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 and 26 is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No: _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

Applicant's election of Group I in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Objections

Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The expression "the MTO has saybolt color rating greater than +20" in claim 9 is already claimed in claim 1.

Claim 16 is objected to because of the following informalities: The expression "10 A" in line 2 is incorrect. The expression should be recited as --10 Å--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 1 recites the limitation "the petroleum hydrocarbon solvent" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malloy et al. (4,243,831)

Biscardi discloses an adsorption process to improve to saybolt color of a hydrocarbon feed by contacting the feed with a solid adsorbent such as clay or molecular sieve (e.g., zeolite X) wherein the feed has a saybolt color of +6.2 and the treated product has a saybolt color of +27.8. The adsorption is operated at an ambient temperature and pressure and carried out in batch wise or in continues manner. The adsorbent has a high surface area and has residual acidity in the range of 9-12 mg KOH/g. The spent adsorbent is then regenerated at a temperature of from 66-120° C. (See col. 1, lines 28-47; col. 3, line 44 through col. 4, line 40; col. 7, line 34 through col. 8, line 60; col. 9, line 30 through col. 10, line 30; Table I; example 9).

Biscardi does not disclose that the product (MTO) has a boiling point in the range of 145-205° C or 180-205° C. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Biscardi by using a feedstock to produce a MTO product as claimed because one of skill in the art would use any hydrocarbon feed in the process of Biscardi because it would be expected that the adsorbent of Biscardi is effective to improve saybolt color of any hydrocarbon fraction including the claimed feed.

Biscardi does not disclose that the feed is rich in nitrogen (e.g., 5.2 ppm) and/or sulfur (e.g., .136 % wt; 2.5 ppm of mercaptan). However, Biscardi discloses that the feedstock usually comprises about 300 ppm of sulfur compounds. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Biscardi by using a feedstock comprises nitrogen and/or sulfur (including mercaptan) as

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claimed because the adsorbent of Biscardi would adsorb nitrogen and sulfur from the feed.

Therefore, using the claimed feed would not affect the outcomes of the Biscardi process.

Biscardi does not disclose the amount of impurities (e.g., sulfur and nitrogen) in the product. However, the modified process of Biscardi is similar to the claimed process in terms of feedstock and adsorbent. Therefore, it would be expected that the modified process of Biscardi would provide a product having the amount of impurities as claimed.

Biscardi does not disclose that the molecular sieve has a core diameter of 10 angstroms. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Biscardi by using a molecular sieve has the claimed diameter because one of skill in the art would use any adsorbent having any diameter (including the claimed diameter) that is effective to improve saybolt color of the feedstock and it would be expected that the results would be the same or similar when using an adsorbent has a diameter of 10, 9 or 11 angstroms in the process of Biscardi.

Biscardi does not disclose the clay adsorbent has a surface area in the range of 350 – 425 m²/g. However, Biscardi discloses that any high surface area can be used in the process. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Biscardi by using an adsorbent having the claimed surface area because one of skill in the art would use any adsorbent having high surface area including the claimed surface area.

Biscardi does not disclose that the adsorbent is regenerated at 200 to 300° C in nitrogen atmosphere. However, Biscardi discloses that the adsorbent is regenerated by heating to a temperature above the adsorption temperature and sweeping the adsorbent with gaseous and/or

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liquid fluid to remove the haze precursors. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Biscardi by regenerating the adsorbent at 200° C because it would be expected that the results be the same or similar when heating the adsorbent at either 120 or 200° C because higher temperature would result in speed up the regenerating step. Also one of skill in the art would use any gaseous in the regenerating step including nitrogen.

Allowable Subject Matter

Claims are 25-26 allowed.

The following is a statement of reasons for the indication of allowable subject matter: No prior art of record discloses or renders obvious a process for producing a mineral turpentine oil having saybolt color better than +20 from a crude oil wherein the crude oil is processed including steps of distillation and adsorption as called for in claim 25.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (703) 305-7715. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tam M. Nguyen
Examiner
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A handwritten signature in black ink, appearing to read 'Tam', with a long horizontal line extending to the right.

TN